

Why do some ECM verbs resist passivisation? A phase- based explanation *

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1. Introduction

In many languages, causative/perception verbs resist passivisation, as shown in (1), for English and (2), for Brazilian Portuguese (henceforth, BP) (see also Higginbotham 1983, Folli and Harley 2007, Hornstein, Nunes and Martins 2010):

- (1) a. *She was let/had/made/seen/heard leave the room.
b. She was seen/heard/made to leave the room.
- (2) Os meninos foram *feitos/*vistos/ mandados/ deixados sair.
the boys were made/ seen/ had let leave
Lit. 'The boys were had/let (to) leave.'

We claim that the problem in (1a)/(2) is that the complement of the matrix verb is a phase, lacking any T-related projection. Adopting the Phase Impenetrability Condition version 2 (PIC2) (Chomsky 2001) and assuming that A-movement cannot proceed through the phase edge, it follows that the arguments of the embedded verb are not visible to matrix T by the time it probes. Where passivisation is possible, however, in (1b)/(2), the complement contains a T-related projection bearing an EPP which provides an escape route from the lower phase: the subject of the embedded verb moves out of the lower phase to spec TP, from which it is visible to matrix T.

Our paper is organized as follows. Section 1 reviews complementation with causative/perception verbs in English and BP. In section 2, we propose that these complements are of size differences, using evidence from auxiliary verbs and temporal

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reference. This leads us, in section 3, to generalisation regarding passivisation. Section 4 provides a phase-base analysis of this generalisation and sketches some broader cross-linguistic implications.

2. Causatives/perception verbs in English and in BP

Verbs of perception, like some causatives/permissives, permit ‘bare verbal complements’ in English (see Declerck 1981; Higginbotham 1983; Mittwoch 1990; Felser 1998, 1999 on perception verbs; Ritter and Rosen 1993, 1997, on causatives), as seen below:

- (3) a. We saw/watched/heard/noticed [the boy fall].
b. We had/made/let/helped [the boy fall].

These verbs also permit different kinds of non-finite complements:

- (4) a. I had/saw/watched/heard/listened to [him singing for ten minutes].
b. I had/saw/heard [the national anthem sung by my team].
c. I saw/heard [him to be a nice person].

The bare verbal complements in (3) have obligatory subjects (5a), but ban complementisers (5b), high adverbials and modals (5c), require temporal simultaneity and are eventive (5d,e) (see Mittwoch 1990, Felser 1998, 2000, Pires 2006, Ritter and Rosen 1993, Myler 2014):

- (5) a. *I had/made/saw/heard PRO sing the song.
b. *I had/made/saw/heard for him buy some flowers.
c. *We had/made/saw/heard regrettably John walk away.
d. #Yesterday I had/made/saw/heard him leave this morning.
e. #I saw the lamp stand in the corner.

The patterns in (5) suggest that these complements are as big as vP but smaller than TP.

A slightly different picture is seen in BP. Unlike European Portuguese, BP lacks *faire-infinitif* and *faire-par* causatives and makes greater use of ECM with these verbs (Cyrino 2010a, b; Bonfim and Salles 2016, Sheehan and Cyrino 2016):

- (6) A Maria fez/ mandou/deixou/viu/ ouviu [os meninos cantar a música].
the Maria made/ had/ let/ saw/ heard the boys sing the music
‘Maria made/had/let/saw/heard the boys sing the song.’

Where the causee is 1st/2nd person, we can see from the clitics that it receives accusative case, but this is not possible with 3rd person causees, as BP lacks 3rd person clitics. A further complication is that inflected infinitives are also allowed in this context, but these behave like full CPs in permitting topicalization (7) and lacking selectional restrictions (8), unlike ECM complements:

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- (7) Eu fiz, a água, todas as meninas beber*(em).
I made the water all the girls drink.INF(.3PL)
'The water, I made all the girls drink.'
- (8) a. Eu mandei as madeiras chegar*(em) cedo.
I had the logs arrive.INF(.3PL) early
b. Eu mandei que as madeiras chegassem cedo.
I had that the logs arrived early
'I had the logs arrive early.'

With 3rd person plural causees the difference between the two structures is clear and only uninflected ECM complements permit passivisation, as seen in (9):

- (9) Os meninos foram mandados/deixados sair(*em).
the boys were had/let leave.3PL
'The boys were ordered to leave.'

Note, finally, that uninflected complements do not involve object control:

- (10) a. O que eu mandei/ deixei foi [os meninos ir embora].
the that I had/ let was the boys go away
b. *O que eu persuadi/ convenci foi os meninos ir embora.
the that I persuaded/ convinced was the boys go away

As a result, we conclude that inflected infinitival complements are full CPs, whereas bare infinitival complements are smaller, involve ECM and sometimes allowing passivisation.

3. Size differences

Adopting the approach to auxiliaries in Adger (2003); Bjorkman (2011), we can use their distribution to diagnose complement size: the possibility of a given auxiliary implies the possibility of that v-related projection. As seen in (11), passive auxiliaries are possible in all of these bare ECM complements in English and BP, meaning these complements are at least as large as voicePs:

- (11) a. I made/had/let/saw/heard the teachers be fired.
b. Eu fiz/ mandei/ deixei/ vi/ ouvi os professores ser despedidos.
I made/ had/ let/ saw/heard the teachers be fired
'I made/had/let/saw/heard the teachers be fired.'

Progressive auxiliaries (prog), on the other hand are not possible with verbs of perception, but may occur with all causatives/permissives in both languages:

- (12) a. I made/?had/?let/*saw the kids be reading when the head was due to visit.

- b. Eu fiz/ mandei/ ?deixei/ *vi/ *ouvi as meninas estar lendo
I made/had/ let/ saw/ heard the girls be reading
na hora em que o diretor chegasse.
in.the hour in that the head arrived

Only *make* marginally allows the perfective auxiliary *have* (perf) in English:

- (13) I ??made/*had/*let/*saw my students have read that paper before the seminar.

In BP, however, *fazer* ‘make’, *mandar* ‘have’ and *deixar* ‘let’ permit the perfective auxiliary *ter* (perf) more easily:

- (14) Eu fiz/ mandei/ deixei/*vi/ *ouvi as meninas ter lido aquele livro
I made/had/ let/ saw/ heard the girls have read that book
antes de a gente se encontrar.
before of the people SE meet
lit. ‘I made/had/let/*saw/*heard the girls have read that book before we met.

Moreover, the complements of *mandar* ‘have’/ *deixar* ‘let’ permit independent temporal reference:

- (15) Ontem o Pedro deixou/mandou/*fez/ *viu [as crianças viajar amanhã].
Yesterday the Pedro let had made saw the children travel tomorrow
‘Yesterday Pedro let/had the children travel tomorrow.’

This seems to be connected to complement size. Where *fazer* ‘make’ takes a finite clause (16), independent temporal modification is fully acceptable. The same can be said of English (17):

- (16) Ontem a Maria fez [com que o marido viajasse amanhã].
Yesterday the Maria made with that the husband travel tomorrow
‘Yesterday Maria made it so that her husband would travel tomorrow.’

- (17) Yesterday I heard [that John will leave tomorrow].

In English, ECM complements with *to* also often permit independent temporal reference:

- (18) Yesterday, John expected/required [Mary to leave tomorrow].

Following Wurmbrand (2014), we assume that independent temporal reference indicates the presence of a covert future modal *woll*, which is not in the vP extended projection but is a T-related head: where the complement of a causative/perception verb is smaller than *woll*P, temporal simultaneity results (see also Higginbotham 1983, Mittwoch 1990, Ramchand 2011) leading to veridicality of the embedded situation/event (Barwise 1981):

- (19) a. *Yesterday I had/made/saw/heard him leave this morning. (no wollP)
 b. John saw/had the director be fired, #but he wasn't. (no wollP)

This is because two eventive vP projections are both anchored to the same TP. Complements containing wollP behave differently: independent temporal reference is possible, as per (15), and veridicality also fails, as shown by (20):

- (20) Eu mandei/ *fiz/ *vi as crianças estudar o livro mas elas não fizeram isso
 I had/ made/ saw the kids study the book but they not did this
 'I had/let/made/saw the kids study the book, but they didn't do it.'

In sum, we have seen that bare verbal ECM complements can be of differing sizes within and across languages. In the following sections, we show how these differences can explain the availability of passivisation.

3. The connection with passivisation

The following provides a summary bare verbal complementation in English and BP:

- (21) a. see/hear/ver 'see'/ouvir 'hear' [voiceP voice [vP vP]]
 b. let/have [ProgP prog [voiceP voice [vP vP]]]
 c. make/fazer 'make' [PerfP Perf [ProgP prog [voiceP voice [vP vP]]]]
 d. mandar 'have'/deixar 'let' [wollP woll [PerfP Perf [ProgP prog [voiceP voice [vP vP]]]]]

Of all these complements, only (21d) permits passivisation.

- (22) Os meninos foram mandados/deixados comer todo o lanche
 the boys were had/let eat all the snack
 'The boys were made/allowed to eat the whole snack.'

This contrast follows, we propose, from phase theory.

We adopt the proposal that progP/voiceP is the highest v-related phase in English and BP, based on evidence from 'VP-ellipsis' and 'VP-fronting' (see Harwood 2015, Ramchand and Svenonius 2014, Wurmbrand 2012b, Aelbrecht and Harwood 2015). This entails a dynamic approach to phase-head status (following Bobaljik and Wurmbrand 2005; Bošković 2014), so that *voice* is a phase head in the absence of *prog*, but *prog* becomes the phase head where present. This means that all causative/perception verbs except BP *mandar/deixar* (21d) select a complement which contains a v-related phase but lacks any T-related projection. It is this fact, we claim, which rules out passivisation. Both English and BP have an EPP feature/requirement which forces subjects to raise to spec TP. Where T is lacking, however, the subject requirement also fails to be present and it is this fact that explains the difference between (21d) and (21a-c).

We adopt the less strict version of phasal transfer labelled PIC2. PIC2 differs from the Phase Impenetrability Condition version 1 (PIC1, Chomsky 2000) in providing a

‘window of opportunity’ after the construction of the v-related phase during which A-movement can take place (before the next phase head is merged). This window of opportunity means that we don’t need to posit A-movement through the phase edge, even if we accept the evidence that *progP/voiceP* is a phase in passive/unaccusative contexts (Legate 2003). In all such cases, internal/external arguments can raise directly to spec TP over an intervening *voice* phase head. Under the stricter PIC1, this movement would need to proceed through the phase edge, as the complement of *voice* would be transferred as soon as *voice*’s edge features have been satisfied. The frequent ban on passivisation of causative/perception verbs provides strong evidence against PIC1 and in favour of PIC2.

What is special about (21a-c), in these terms, is that they involve A-movement which crosses two *voice* phase heads, without any intervening T-related head:

(23) * $[_{TP} DP_i T [_{voiceP} \textbf{voice} [_{VP} V [_{voiceP} \textbf{voice} [_{vP} t_i v [_{VP} V DP]]]]]]]$

That this kind of movement is ruled out follows, given the version of phases that we have outlined, if A-movement does not have access to phase-edge escape hatches. In the following section, we give a derivation for active/passive ECM complements of different sizes to show how this effect arises.

4. Derivation of active/passive ECM contexts

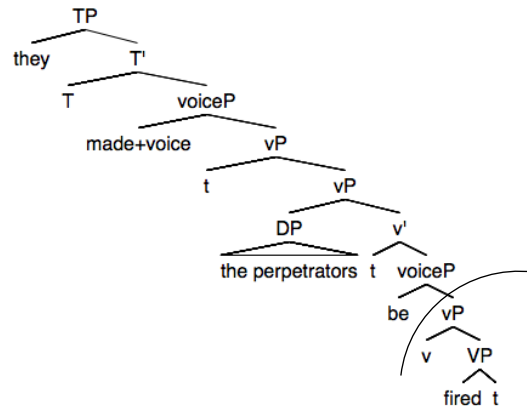
We assume that ECM involves raising to object (Postal 1974, Johnson 1991, Lasnik 2001), as shown in (24):

(24) Mary made John_i out [_i to be a fool]. (Johnson 1991)

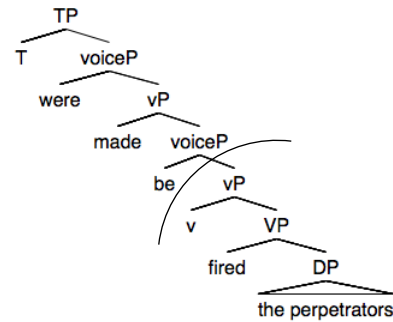
Let us assume that, in active contexts, the highest argument of the non-finite complement raises to matrix spec vP in connection with accusative case assignment in both languages (see (25a)). This derives the correct word order without the need to stipulate an EPP on embedded voice, if the matrix verb also raises to voice in active contexts. In passive contexts, (25b), however, there is no movement of the embedded subject to spec vP as there is no accusative case. This means that all arguments of the lower verb are spelled out before matrix T probes, ruling out passivisation. The reason why *mandar/deixar* allow passivisation in BP is because they take a larger wollP complement, where woll is a T-related head with an EPP feature. The presence of this EPP feature means that the highest argument of the embedded clause raises to spec wollP, escaping the lower v-related phase:

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(25) a. *Tree of active derivation*

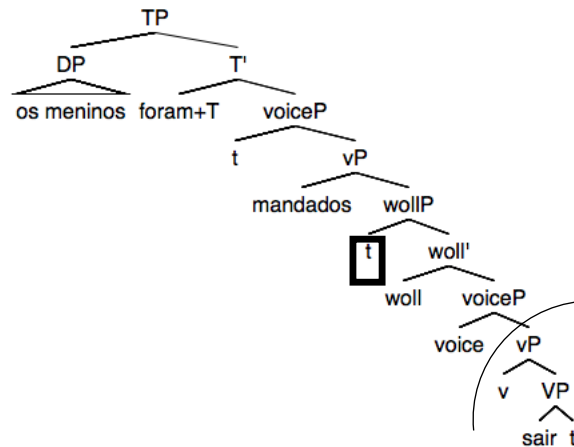


b. *Tree of passive derivation*



Now compare (25b) with (26). The crucial point about (26) is that *os meninos* ‘the boys’ raises to spec wollP before matrix T probes, rendering itself accessible to T. This is the reason why larger ECM complements in English also permit passivisation. Experiencer verbs of perception permit to-infinitival complements in cases of indirect perception and these can undergo passivisation, precisely because they are TPs (as in (27)):

(26) *Tree of passive derivation with wollP complement*



(27) She was made/seen/heard [TP to be the best candidate].

This is also possible as a repair mechanism with *make* but not *let/have* in English. *Make* is exceptional in that it does not allow TP complements in the active. It appears to be a member of the *wager* class, allowing ECM with a TP complement only where the ECM-marked argument is a trace (David Pesetsky, personal communication):

(28) ?Mary, who I made to leave the room early, didn’t make a fuss.

Note that verbs of perception/causation also permit passivisation where they function as transitive verbs or take non-verbal small clauses or gerunds (in both BP and English):

- (29) a. *Kim_i was made/had/let seen/heard [t_i sing]
b. [Many films]_i have been seen/watched t_i in this cinema.
c. Sam_i was made [t_i angry] by the news.
d. Kim was seen/heard [t_i singing].

This is further evidence that the ungrammaticality of (29a) has a structural explanation. On the current approach, (29b-c) pose no problem as only a single phase head intervenes between T and its goal, taking non-verbal small clauses to be non-phasal as they lack *voice* and *prog*. The grammaticality of (29d) and its BP counterpart is, however, more challenging. We note that these gerundive complements have two possible structures:

- (30) a. I heard [Kim singing] gerund and DP form constituent
b. I heard Kim [PRO singing] gerund is depictive

These gerundive complements do not behave like ECM complements, unlike their bare verbal counterparts. They can stand alone as answers, and be clefted, for example:

- (31) a. What did you hear?
b. Kim sing*(ing) in the shower.
c. Kim sing*(ing) in the shower is what I heard.
d. What I heard was Kim sing*(ing) in the shower.

It is therefore doubly unsurprising that unambiguous clausal gerundive complements cannot be passivised, as they are not ECM constructions (Borgonovo 1996) (33)-(34). Compare this with parallel (real) ECM contexts, where passivisation is fine (35)-(36):

- (33) a. I saw it raining this morning.
b. *It was seen raining this morning. (Borgonovo 1996:8)
- (34) a. I can see there being several possible solutions.
b. *There can be seen being several possible solutions.
- (35) a. I expect it to rain.
b. It is expected to rain.
- (36) a. I expect there to be a solution.
b. There is expected to be a solution.

The implication is that examples like (29d) (and their BP equivalents) involve passivisation of a simple transitive verb with a gerundive depictive. They are not, therefore, problematic for the analysis put forth here. There are no gerundive ECM complements, and certainly none that are compatible with passivisation.

5. Conclusions

In this paper we have showed that ECM complements can be passivized only where they include a T-related projection. This follows from a version of phase theory if:

- (i) the v-related phase is *progP/voiceP*
- (ii) we adopt PIC2 and Legate's proposal that passives/unaccusatives are phasal
- (iii) A-movement does not have access to phase edge escape hatches.

If A-movement could proceed through the phase edge, then it would be able to escape phasal complements in all contexts, contrary to what we observe. Rather, what we see is a trapping effect wherever a phasal complement is embedded without any T-related projection. The reason that this effect is observed so often with causative/perception verbs is, we propose, because these verbs often select eventive complements, which are syntactically realized without a T-projection, leading to event simultaneity.

References

- Adger, David. 2003. *Core syntax: A minimalist approach*. Oxford: Oxford University Press.
- Aelbrecht, Lobke, and William Harwood. 2015. To be or not to be elided: VP ellipsis revisited. *Lingua* 153:66-97.
- Barwise, Jon., 1981. Scenes and Other Situations. *The Journal of Philosophy* 78:369-397.
- Bjorkman, Bronwyn. 2011. *BE-ing default: The morphosyntax of auxiliaries*. Doctoral dissertation, MIT, Cambridge, MA.
- Bonfim, Manoel, & Heloisa Salles. 2016. Causativas ECM e controle reverso: uma proposta para o português brasileiro. *Estudos linguísticos* 44:110-125.
- Bošković, Željko. 2014. Now I'm a phase, now I'm not a phase: On the variability of phases with extraction and ellipsis. *Linguistic Inquiry* 45:27-89.
- Borgonovo, Claudia. 1996. Gerunds and perception verbs. *Langues et linguistique* 22:1-19.
- Chomsky, Noam. 2000. Minimalist inquiries: The framework. In *Step by step*, ed. by Roger Martin, David Michaels and Juan Uriagereka, 89-156. Cambridge, MA: MIT Press.
- Chomsky, Noam. 2001. Derivation by Phase. In *Ken Hale: A Life in Language*, ed. By Michael Kenstowicz, 1-52. Cambridge, MA: MIT Press.
- Cyrino, Sonia. 2010a. On Romance syntactic complex predicates: why Brazilian Portuguese is different. *Estudos da Língua(gem)* 8:187-222.
- Cyrino, Sonia. 2010b. On complex predicates in Brazilian Portuguese. *Iberia: An International Journal of Theoretical Linguistics* 2:1-21.
- Declerck, Renaat. 1981. On the role of progressive aspect in nonfinite perception verb complements. *Glossa* 15:83-114.
- Felser, Claudia. 1998. Perception and control: A minimalist analysis of English direct perception complements. *Journal of Linguistics* 34:351-385.
- Felser, Claudia. 1999. *Verbal complement clauses: A minimalist study of direct perception constructions* Amsterdam: John Benjamins.
- Folli, Raffaella, & Heidi Harley. 2007. Causation, obligation, and argument structure: On the nature of little v. *Linguistic Inquiry* 38:197-238.

- Harwood, William. 2015. Being progressive is just a phase: celebrating the uniqueness of progressive aspect under a phase-based analysis. *Natural Language & Linguistic Theory* 33:523-573.
- Higginbotham, James. 1983. The logic of perceptual reports: An extensional alternative to situation semantics. *The Journal of Philosophy* 80:100-127.
- Hornstein, Norbert, Jairo Nunes, & Ana Maria Martins. 2010. Perception and causative structures in English and European Portuguese. *Syntax* 11:205-229.
- Johnson, Kyle. 1991. Object positions. *Natural Language and Linguistic Theory* 9:577-636.
- Lasnik, Howard. 2001. Subjects, objects, and the EPP. In *Objects and other subjects: Grammatical functions, functional categories, and configurationality*, ed. By William D. Davies and Stanley Dubinsky, 103–121. Dordrecht: Kluwer Academic Publishers.
- Legate, Julie Anne. 2003. Some interface properties of the phase. *Linguistic Inquiry* 34:506-16.
- Mittwoch, Anita. 1990. On the distribution of bare infinitive complements in English. *Journal of Linguistics* 26:103-131.
- Myler, Neil. 2014. *Building and interpreting possession sentences*. Doctoral dissertation, NYU, New York.
- Pires, Acrísio. 2006. *The minimalist syntax of defective domains: Gerunds and infinitives*. Amsterdam: John Benjamins.
- Postal, Paul. 1974. *On raising: One rule of English grammar and its theoretical implications*. Cambridge, MA: MIT Press.
- Ramchand, Gillian. 2011. Licensing of Instrumental Case in Hindi/Urdu Causatives. In *Nordlyd 36.1, special issue on Nanosyntax*, ed. by Peter Svenonius, Gillian Ramchand, Michal Starke, and Knut Tarald Taraldsen, 1-38. CASTL, Tromsø.
- Ramchand, Gillian, & Peter Svenonius. 2014. Deriving the functional hierarchy. *Language Sciences* 46:152-174
- Ritter, Elizabeth & Sarah Rosen. 1993. Deriving causation. *Natural Language & Linguistic Theory* 11:519-555.
- Ritter, Elizabeth & Sarah Rosen. 1997. The function of HAVE. *Lingua*, 101:295-321.
- Sheehan, Michelle, & Sonia Cyrino. 2016. Variation and change in the faire-par causative. In *Romance Languages and Linguistic Theory*, ed. by Ernestina Carrilho, Alexandra Fieis, Maria Lobo and Sandra Pereira, 279-304. Amsterdam: John Benjamins.
- Wurmbrand, Susi. 2012. The syntax of valuation in auxiliary-participle constructions. In *Proceedings of the 29th West Coast Conference on Formal Linguistics (WCCFL 29)*, ed. by Jaehoon Choi, E. Alan Hogue, Jeffrey Punske, Deniz Tat, Jessamyn Schertz, and Alex Trueman, 154-162. Somerville, MA.: Cascadia Press.
- Wurmbrand, Susi. 2014. Tense and aspect in English infinitives. *Linguistic Inquiry* 45:403-447.

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